

Claims:

1. A production method of a columnar electric device, characterized in that the method comprises the steps of:

helically winding a mask material onto an outer periphery of an insulative columnar body; and

coating an electroconductive substance onto the outer periphery of the columnar body through a helical gap defined by the mask material, thereby forming an electroconductive wire.

2. A production method of a columnar electric device, characterized in that the method comprises the steps of:

winding, onto an outer periphery of an insulative columnar body, a plate-like product obtained by mutually joining two or more linear substances into a stripe shape;

subsequently peeling off a part of the linear substances so as to coat an electroconductive substance onto the outer periphery through a trace of the peeled linear substance, to thereby form an electroconductive wire; and

peeling off the remaining linear substances.

3. A production method of a columnar electric device, characterized in that the method comprises the steps of:

winding, onto an outer periphery of an insulative columnar body, a plate-like product obtained by mutually joining two or more insulative wires into a stripe shape; and

subsequently peeling off a part of the insulative

wires so as to coat an electroconductive substance onto the outer periphery through a trace of the peeled insulative wire, to thereby form an electroconductive wire.

4. A production method of a columnar electric device, characterized in that the method comprises the step of:

winding, onto an outer periphery of a columnar body, a plate-like product obtained by mutually joining two or more electroconductive wires into a stripe shape; and subsequently peeling off a part of the electroconductive wires.

5. A production method of a columnar electric device, characterized in that the method comprises the step of:

winding, onto an outer periphery of an insulative columnar body, a plate-like product obtained by mutually joining an electroconductive wire and an insulative wire into a stripe shape.

6. The production method of a columnar electric device of any one of claims 1 through 5, characterized in that the columnar electric device is a sensor or solar cell.

7. A columnar electric device characterized in that the columnar electric device comprises:

an insulative columnar body; and
an electroconductive wire helically wound around an outer periphery of said insulative columnar body.

8. The columnar electric device of claim 7, characterized in that said columnar body is a fibrous body.

9. A production method of a columnar electric device,

characterized in that the method comprises the steps of:

coating a semiconductor onto an outer periphery of an insulative columnar body;

subsequently, helically winding a first mask material onto an outside of the semiconductor;

coating a first electroconductive substance onto the outside through a helical gap defined by the first mask material, to thereby form a first electroconductive wire;

thereafter removing the first mask material;

subsequently, helically winding a second mask material onto the outside in a manner to cover the first electroconductive wire; and

coating a second electroconductive substance onto the outside through a helical gap defined by the second mask material, to thereby form a second electroconductive wire.

10. A production method of a columnar electric device, characterized in that the method comprises the steps of:

coating a semiconductor onto an outer periphery of an insulative columnar body;

subsequently winding four or more linear substances onto an outside of the semiconductor;

thereafter peeling off one or more of the linear substances, and coating a first electroconductive substance onto the outside through a trace of the peeled linear substances, to thereby form a first electroconductive wire;

peeling off one or more of the linear substances, which is/are not neighboring to the first electroconductive

wire, and coating a second electroconductive substance onto the outside through a trace of the peeled linear substances, to thereby form a second electroconductive wire; and

peeling off the remaining linear substances.

11. A production method of a columnar electric device, characterized in that the method comprises the steps of:

coating a semiconductor onto an outer periphery of an insulative columnar body;

subsequently winding, onto an outside of the semiconductor, a plate-like product obtained by mutually joining four or more insulative wires into a stripe shape;

thereafter peeling one or more of the insulative wires, and coating a first electroconductive substance onto the outside through a trace of the peeled insulative wires, to thereby form a first electroconductive wire; and

peeling off one or more of the insulative wires, which is/are not neighboring to the first electroconductive wire, and coating a second electroconductive substance onto the outside through a trace of the peeled insulative wires, to thereby form a second electroconductive wire.

12. A production method of a columnar electric device, characterized in that the method comprises the steps of:

coating a semiconductor onto an outer periphery of an insulative columnar body;

subsequently winding, onto an outside of the semiconductor, a plate-like product obtained by mutually joining four or more electroconductive wires into a stripe

shape; and

thereafter peeling off two of the electroconductive wires, which are separated from each other by at least one of the electroconductive wires therebetween.

13. A production method of a columnar electric device, characterized in that the method comprises the steps of:

coating a semiconductor onto an outer periphery of an insulative columnar body; and

subsequently winding, onto an outside of the semiconductor, a plate-like product obtained by mutually joining two electroconductive wires and two insulative wires into a stripe shape in a staggered manner.

14. A production method of a columnar electric device, characterized in that the method comprises the steps of:

coating a semiconductor onto an outer periphery of an insulative columnar body;

subsequently winding, onto an outside of the semiconductor, a plate-like product obtained by mutually joining one electroconductive wire comprising a first electroconductive substance and three insulative wires into a stripe shape; and

thereafter peeling off the insulative wire, which is not neighboring to the first electroconductive wire, and coating a second electroconductive substance onto the outside through a trace of the peeled insulative wire to thereby form a second electroconductive wire.

15. The production method of a columnar electric

device of any one of claims 9 through 14, characterized in that the columnar electric device is a sensor or solar cell.

16. A columnar electric device characterized in that the columnar electric device comprises:

an insulative columnar body;

a semiconductor coated on an outer periphery of said insulative columnar body; and

two electroconductive wires which are mutually parallel and helically wound around an outside of said semiconductor.

17. The columnar electric device of claim 14, characterized in that said columnar body is a fibrous body.

18. A solar cell characterized in that said solar cell comprises:

an insulative columnar body;

an organic semiconductor coated on an outer periphery of said insulative columnar body; and

a gold wire and an aluminum wire which are mutually parallel and helically wound around an outside of said organic semiconductor.

19. The solar cell of claim 18, characterized in that said columnar body is a fibrous body.

20. A production method of a columnar electric device, characterized in that the method comprises the steps of:

helically winding a first mask material onto an outer periphery of an insulative columnar body;

coating a first electroconductive substance onto the

outer periphery through a helical gap defined by the first mask material, to thereby form a first electroconductive wire;

thereafter removing the first mask material;

subsequently, helically winding a second mask material onto the outer periphery in a manner to cover the first electroconductive wire;

coating a second electroconductive substance onto the outer periphery through a helical gap defined by the second mask material, to thereby form a second electroconductive wire;

thereafter removing the second mask material; and

coating a semiconductor onto the outer periphery through each helical gap defined by the two electroconductive wires therebetween.

21. A production method of a columnar electric device, characterized in that the method comprises the steps of:

winding, onto an outer periphery of an insulative columnar body, a plate-like product obtained by mutually joining four or more linear substances into a stripe shape;

thereafter peeling off one or more of the linear substances, and coating a first electroconductive substance onto the outer periphery through a trace of the peeled linear substances, to thereby form a first electroconductive wire;

peeling off one or more of the linear substances, which is/are not neighboring to the first electroconductive

wire, and coating a second electroconductive substance onto the outer periphery through a trace of the peeled linear substances, to thereby form a second electroconductive wire, and

peeling off the remaining linear substances, and coating a semiconductor onto the outer periphery through a trace of the peeled linear substances.

22. A production method of a columnar electric device, characterized in that the method comprises the steps of:

winding, onto an outer periphery of an insulative columnar body, a plate-like substance obtained by mutually joining four or more semiconductor wires into a stripe shape;

thereafter peeling off one or more of the semiconductor wires, and coating a first electroconductive substance onto the outer periphery through a trace of the peeled semiconductor wires, to thereby form a first electroconductive wire; and

peeling off one or more of the semiconductor wires, which is/are not neighboring to the first electroconductive wire, and coating a second electroconductive substance onto the outer periphery through a trace of the peeled semiconductor wires, to thereby form a second electroconductive wire.

23. A production method of a columnar electric device, characterized in that the method comprises the steps of:

winding, onto an outer periphery of an insulative

columnar body, a plate-like substance obtained by mutually joining four or more electroconductive wires into a stripe shape; and

thereafter peeling off two of the electroconductive wires, which are separated from each other by at least one of the electroconductive wires therebetween, and coating a semiconductor onto the outer periphery through traces of the peeled electroconductive wires.

24. A production method of a columnar electric device, characterized in that the method comprises the steps of:

winding, onto an outer periphery of an insulative columnar body, a plate-like product obtained by mutually joining two electroconductive wires and two semiconductor wires into a stripe shape in a staggered manner.

25. A production method of a columnar electric device, characterized in that the method comprises the steps of:

winding, onto an outer periphery of a columnar body, a plate-like product obtained by mutually joining one electroconductive wire comprising a first electroconductive substance and three semiconductor wires into a stripe shape; and

thereafter peeling off the semiconductor wire, which is not neighboring to the first electroconductive wire, and coating a second electroconductive substance onto the outer periphery through a trace of the peeled semiconductor wire, to thereby form a second electroconductive wire.

26. The production method of a columnar electric

device of any one of claims 20 through 25, characterized in that the columnar electric device is a sensor or solar cell.

27. A columnar electric device characterized in that the columnar electric device comprises:

an insulative columnar body;

two electroconductive wires which are mutually parallel and helically wound around an outer periphery of said insulative columnar body; and

a semiconductor coated on the outer periphery along each helical gap defined by said two electroconductive wires therebetween.

28. The columnar electric device of claim 27, characterized in that said columnar body is a fibrous body.

29. A solar cell characterized in that said solar cell comprises:

an insulative columnar body;

a gold wire and an aluminum wire which are mutually parallel and helically wound on an outer periphery of said insulative columnar body; and

an organic semiconductor coated on the outer periphery along each helical gap defined by said gold wire and said aluminum wire therebetween.

30. The solar cell of claim 29, characterized in that said columnar body is a fibrous body.

31. A production method of a columnar electric device, characterized in that the method comprises the steps of:

coating a first semiconductor onto an outer periphery

of an insulative columnar body;

subsequently, helically winding a first mask material onto an outside of the first semiconductor;

coating a first electroconductive substance onto the outside through a helical gap defined by the first mask material, to thereby form a first electroconductive wire;

thereafter removing the first mask material;

subsequently, helically winding a second mask material in a manner to cover the first electroconductive wire;

coating a second electroconductive substance onto the outside through a helical gap defined by the second mask material, to thereby form a second electroconductive wire,

thereafter removing the second mask material; and

coating a second semiconductor onto the outside through each helical gap defined by the two electroconductive wires therebetween.

32. A production method of a columnar electric device, characterized in that the method comprises the steps of:

coating a first semiconductor onto an outer periphery of an insulative columnar body;

subsequently winding, onto an outside of the first semiconductor, a plate-like product obtained by mutually joining four or more linear substances into a stripe shape;

thereafter peeling off one or more of the linear substances, and coating a first electroconductive substance onto the outside through a trace of the peeled linear

substances, to thereby form a first electroconductive wire;

peeling off one or more of the linear substances, which is/are not neighboring the first electroconductive wire, and coating a second electroconductive substance onto the outside through a trace of the peeled linear substances, to thereby form a second electroconductive wire; and

peeling off the remaining linear substances, and coating a second semiconductor onto the outside through a trace of the peeled linear substances.

33. A production method of a columnar electric device, characterized in that the method comprises the steps of:

coating a first semiconductor onto an outer periphery of an insulative columnar body;

subsequently winding, onto an outside of the first semiconductor, a plate-like product obtained by mutually joining four or more semiconductor wires into a stripe shape;

thereafter peeling off one or more of the semiconductor wires, and coating a first electroconductive substance onto the outside through a trace of the peeled semiconductor wires, to thereby form a first electroconductive wire; and

peeling off one or more of the semiconductor wires, which is/are not neighboring to the first electroconductive wire, and coating a second electroconductive substance onto the outside through a trace of the peeled semiconductor wires, to thereby form a second electroconductive wire.

34. A production method of a columnar electric device, characterized in that the method comprises the steps of:

coating a first semiconductor onto an outer periphery of an insulative columnar body;

subsequently winding, onto an outside of the first semiconductor, a plate-like product obtained by mutually joining four or more electroconductive wires into a stripe shape;

thereafter peeling off two of the electroconductive wires, which are separated from each other by at least one of the electroconductive wires therebetween, and coating a second semiconductor onto the outside through traces of the peeled electroconductive wires.

35. A production method of a columnar electric device, characterized in that the method comprises the steps of:

coating a first semiconductor onto an outer periphery of an insulative columnar body; and

subsequently winding, onto an outside of the first semiconductor, a plate-like product obtained by mutually joining two electroconductive wires and two second semiconductor wires into a stripe shape in a staggered manner.

36. A production method of a columnar electric device, characterized in that the method comprises the steps of:

coating a first semiconductor onto an outer periphery of an insulative columnar body;

subsequently winding, onto an outside of the first

semiconductor, a plate-like product obtained by mutually joining one first electroconductive wire comprising a first electroconductive substance and three semiconductor wires into a stripe shape; and

thereafter peeling off the semiconductor wire, which is not neighboring to the first electroconductive wire, and coating a second electroconductive substance onto the outside through a trace of the peeled semiconductor wire, to thereby form a second electroconductive wire.

37. The production method of a columnar electric device of any one of claims 31 through 36, characterized in that the columnar electric device is a sensor or solar cell.

38. A columnar electric device, characterized in that said columnar electric device comprises:

an insulative columnar body;

a first semiconductor coated on an outer periphery of said insulative columnar body;

two electroconductive wires which are mutually parallel and helically wound around an outside of said first semiconductor; and

a second semiconductor coated on the outside along each helical gap defined by said two electroconductive wires therebetween.

39. The columnar electric device of claim 38, characterized in that said columnar body is a fibrous body.

40. A production method of a columnar electric device, characterized in that the method comprises the steps of:

coating a semiconductor onto an outer periphery of an electroconductive columnar body; and

subsequently winding an electroconductive wire onto an outside of the semiconductor.

41. A production method of a columnar electric device, characterized in that the method comprises the steps of:

coating a semiconductor onto an outer periphery of an electroconductive columnar body;

subsequently coating a transparent electrode onto an outside of the semiconductor; and

further winding an electroconductive wire onto an outside of the transparent electrode.

42. The production method of a columnar electric device of claim 40 or 41, characterized in that the columnar electric device is an optical sensor or solar cell.

43. A columnar electric device, characterized in that said columnar electric device comprises:

an electroconductive columnar body;

a semiconductor coated around an outer periphery of said electroconductive columnar body; and

an electroconductive wire helically wound around an outside of said semiconductor.

44. A production method of a columnar transistor, characterized in that the method comprises the steps of:

coating an insulating material onto an outer periphery of an electroconductive columnar body; and

subsequently winding two electroconductive wires onto

an outside of the insulating material.

45. The production method of a columnar transistor of claim 44, characterized in that the method further comprises the steps of:

immersing the columnar transistor in a dopant solution; and

achieving doping, while applying a voltage to the electroconductive columnar body or across the electroconductive wires.

46. A columnar transistor characterized in that said columnar transistor comprises:

an electroconductive columnar body;

an insulating material coated around an outer periphery of said electroconductive columnar body; and

two electroconductive wires which are mutually parallel and helically wound around an outside of said insulating material.